

ABSTRACT

A compact magnet and an RF probe which can accommodate a human extremity such as a heel are used to construct a compact MRI system for diagnosis and follow-up of osteoporosis and other diseases.

- 5 Methods for measuring and calculating proton density in inhomogeneous static magnetic field, magnetic field gradients, and RF magnetic field are provided using 2D spin-echo image acquisitions with external reference materials and image analyses. The measured proton density of bone marrow is used for computation of trabecular
- 10 bone volume fraction, which can be used for diagnosis of osteoporosis and other diseases.